

1. A method to wirelessly communicate data over a plurality of cellular channels, comprising:

sniffing for available frequency channels;

requesting an allocation of preferably adjacent cellular frequency channels from a

5 mobile station to a base station; and

allocating available frequency channels in response to the request from the mobile station.

2. The method of claim 1, further comprising communicating on a short-range radio channel.

10 3. The method of claim 2, wherein the short-range radio channel is Bluetooth or WLAN (802.11x).

4. The method of claim 2, further comprising characterizing the ambient radio environment and dynamically discovering available and active radio

15 protocols.

5. The method of claim 2, further comprising substituting the cellular channel with the short-range channel if the cellular channel becomes unavailable.

6. The method of claim 2, further comprising substituting the short-range channel with the cellular channel if the short-range channel becomes

20 unavailable.

7. The method of claim 2, further comprising scanning ambient radio environment using a parallel set of sniffer circuits.

8. The method of claim 1, further comprising sending a digital signal to a software controlled baseband circuit to select a wireless protocol from the software-controlled baseband circuit.

9. The method of claim 1, further comprising bonding the short-range radio channel with the cellular frequency channels to increase bandwidth.

5 10. The method of claim 1, wherein the cellular channels comprise an uplink band around 890 - 915 MHz and a downlink band around 935 - 960 MHz.

11. The method of claim 5, further comprising bonding over two adjacent channels.

10 12. The method of claim 5, wherein each band is divided into 124 pairs of frequency duplex channels with 200 kHz carrier spacing using Frequency Division Multiple Access (FDMA).

13. The method of claim 5, further comprising:

15 splitting the 200 kHz radio channel into a plurality of time slots;

bonding the time slots; and

transmitting and receiving data in the bonded time slots.

14. The method of claim 5, further comprising splitting the 200kHz radio channel using time division multiple access (TDMA).

15. The method of claim 5, further comprising transmitting cellular packet data conforming to one of the following protocols: cellular digital packet data (CDPD) (for AMPS, IS-95, and IS-136), General Packet Radio Service (GPRS) and EDGE (Enhanced Data for Global Evolution).

20 16. A reconfigurable processor core, comprising:

one or more processing units;
a long-range transceiver unit coupled to the processing units, the long-range transceiver unit communicating over a plurality of cellular frequency channels;

5 a short-range transceiver coupled to the processing units; and

a radio frequency sniffer coupled to at least one of the transceivers.

17. The processor core of claim 11, wherein the reconfigurable processor core includes one or more digital signal processors (DSPs).

18. The processor core of claim 11, wherein the reconfigurable processor core includes one or more reduced instruction set computer (RISC) processors.

10 19. The processor core of claim 11, further comprising a router coupled to the one or more processing units.

20. The processor core of claim 11, wherein the short-range transceiver communicates over a short-range radio channel, further comprising means for bonding the short-range radio channel with the cellular frequency channels to increase bandwidth.